

APRIL/MAY 2025

**23UEBT12 — BIOLOGICAL CHEMISTRY
(ELECTIVE)**

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define atomic theory.
2. What are free radicals?
3. What are the differences between acids and bases?
4. How will you prepare a 1N solution of NaOH?
5. Differentiate anabolism from metabolism.
6. Justify Cori's cycle.
7. How did Chargaff's rules contribute to discovering DNA double helix structure?
8. Who coined the term lipids and why?
9. Classify proteins based on biological functions.
10. List out the water-soluble vitamins.



SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Classify organic compounds with suitable examples.

Or

- (b) List out the order of elements in the periodic table.

12. (a) Define molality and mole fraction with an example.

Or

- (b) Write the properties and functions of biological buffers.

13. (a) Differentiate amylase from amylopectin.

Or

- (b) Explain in detail the steps involved in the TCA cycle.

14. (a) Illustrate the purine synthesis and give its role in biological systems.

Or

- (b) Discuss the biological importance of phospholipids.

15. (a) Classify proteins based on their shapes.

Or

- (b) Illustrate the hormone receptor cell signaling mechanism in biology.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Illustrate the periodic classification of elements and give its significance in biology.

17. Discuss the acid-base theories and concepts.

18. Classify carbohydrates and explain with a suitable example.

19. Write the structure and functions of purine and pyrimidine in biological systems.

20. Illustrate the various structural confirmation of proteins.

